(1) GENERAL INFORMATION:

    (i) APPLICANT: Kandimalla, Ekambar R.
                 Agrawal, Sudhir

    (ii) TITLE OF INVENTION: COOPERATIVE OLIGONUCLEOTIDES

    (iii) NUMBER OF SEQUENCES: 24

    (iv) CORRESPONDENCE ADDRESS:
        (A) ADDRESSEE: Lappin & Kusmer
        (B) STREET: 200 State Street
        (C) CITY: Boston
        (D) STATE: MA
        (E) COUNTRY: USA
        (F) ZIP: 02109

    (v) COMPUTER READABLE FORM:
        (A) MEDIUM TYPE: Floppy disk
        (B) COMPUTER: IBM PC compatible
        (C) OPERATING SYSTEM: PC-DOS/MS-DOS
        (D) SOFTWARE: PatentIn Release #1.0, Version #1.25

    (vi) CURRENT APPLICATION DATA:
        (A) APPLICATION NUMBER: US
        (B) FILING DATE:
        (C) CLASSIFICATION:

    (viii) ATTORNEY/AGENT INFORMATION:
        (A) NAME: Kerner, Ann-Louise
        (B) REGISTRATION NUMBER: 33,523
        (C) REFERENCE/DOCKET NUMBER: HYZ-027

    (ix) TELECOMMUNICATION INFORMATION:
        (A) TELEPHONE: 617-330-1300
        (B) TELEFAX: 617-330-1311

(2) INFORMATION FOR SEQ ID NO:1:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 9 base pairs
        (B) TYPE: nucleic acid
        (C) STRANDEDNESS: single
        (D) TOPOLOGY: linear

    (ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

        (iv) ANTI-SENSE: YES

        (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1:

CTCGCACCC
9

(2) INFORMATION FOR SEQ ID NO:2:

        (i) SEQUENCE CHARACTERISTICS:
            (A) LENGTH: 12 base pairs
            (B) TYPE: nucleic acid
            (C) STRANDEDNESS: single
            (D) TOPOLOGY: linear

        (ii) MOLECULE TYPE: cDNA

        (iii) HYPOTHETICAL: NO

        (iv) ANTI-SENSE: YES

        (xi) SEQUENCE DESCRIPTION: SEQ ID NO:2:

ATCTCTCTCC TT
12

(2) INFORMATION FOR SEQ ID NO:3:

        (i) SEQUENCE CHARACTERISTICS:
            (A) LENGTH: 12 base pairs
            (B) TYPE: nucleic acid
            (C) STRANDEDNESS: single
            (D) TOPOLOGY: linear

        (ii) MOLECULE TYPE: cDNA

        (iii) HYPOTHETICAL: NO

        (iv) ANTI-SENSE: YES

        (xi) SEQUENCE DESCRIPTION: SEQ ID NO:3:

TCTCTCTCCT TC
12

(2) INFORMATION FOR SEQ ID NO:4:

        (i) SEQUENCE CHARACTERISTICS:
            (A) LENGTH: 12 base pairs
            (B) TYPE: nucleic acid

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                (C)  STRANDEDNESS: single
                (D)  TOPOLOGY: linear
         (ii)  MOLECULE TYPE: cDNA

 5      (iii)  HYPOTHETICAL: NO

         (iv)  ANTI-SENSE: YES

         (xi)  SEQUENCE DESCRIPTION: SEQ ID NO:4:
10
    CTCTCTCCTT CT
    12

    (2)  INFORMATION FOR SEQ ID NO:5:
15
          (i)  SEQUENCE CHARACTERISTICS:
                (A)  LENGTH: 21 base pairs
                (B)  TYPE: nucleic acid
                (C)  STRANDEDNESS: single
20              (D)  TOPOLOGY: linear

         (ii)  MOLECULE TYPE: cDNA

        (iii)  HYPOTHETICAL: NO
25
         (iv)  ANTI-SENSE: YES

         (xi)  SEQUENCE DESCRIPTION: SEQ ID NO:5:

30  CTCGCACCCA TCTCTCTCCT T
    21

    (2)  INFORMATION FOR SEQ ID NO:6:

35        (i)  SEQUENCE CHARACTERISTICS:
                (A)  LENGTH: 22 base pairs
                (B)  TYPE: nucleic acid
                (C)  STRANDEDNESS: single
                (D)  TOPOLOGY: linear
40
         (ii)  MOLECULE TYPE: cDNA

        (iii)  HYPOTHETICAL: NO

45       (iv)  ANTI-SENSE: YES

         (xi)  SEQUENCE DESCRIPTION: SEQ ID NO:6:

    CTCGCACCCG TCTCTCTCCT TC
50  22

    (2)  INFORMATION FOR SEQ ID NO:7:
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     (i)  SEQUENCE CHARACTERISTICS:
          (A)  LENGTH: 23 base pairs
          (B)  TYPE: nucleic acid
          (C)  STRANDEDNESS: single
          (D)  TOPOLOGY: linear

    (ii)  MOLECULE TYPE: cDNA

   (iii)  HYPOTHETICAL: NO

    (iv)  ANTI-SENSE: YES

    (xi)  SEQUENCE DESCRIPTION: SEQ ID NO:7:

CTCGCACCCG CCTCTCTCCT TCT
23

(2)  INFORMATION FOR SEQ ID NO:8:

     (i)  SEQUENCE CHARACTERISTICS:
          (A)  LENGTH: 13 base pairs
          (B)  TYPE: nucleic acid
          (C)  STRANDEDNESS: single
          (D)  TOPOLOGY: linear

    (ii)  MOLECULE TYPE: cDNA

   (iii)  HYPOTHETICAL: NO

    (iv)  ANTI-SENSE: YES

    (xi)  SEQUENCE DESCRIPTION: SEQ ID NO:8:

ATCTCTCTCC TTC
13

(2)  INFORMATION FOR SEQ ID NO:9:

     (i)  SEQUENCE CHARACTERISTICS:
          (A)  LENGTH: 15 base pairs
          (B)  TYPE: nucleic acid
          (C)  STRANDEDNESS: single
          (D)  TOPOLOGY: linear

    (ii)  MOLECULE TYPE: cDNA

   (iii)  HYPOTHETICAL: NO

    (iv)  ANTI-SENSE: YES

    (xi)  SEQUENCE DESCRIPTION: SEQ ID NO:9:
```

CGGATCTCTC TCCTT
15

(2) INFORMATION FOR SEQ ID NO:10:

        (i) SEQUENCE CHARACTERISTICS:
             (A) LENGTH: 15 base pairs
             (B) TYPE: nucleic acid
             (C) STRANDEDNESS: single
             (D) TOPOLOGY: linear

       (ii) MOLECULE TYPE: cDNA

      (iii) HYPOTHETICAL: NO

       (iv) ANTI-SENSE: YES

       (xi) SEQUENCE DESCRIPTION: SEQ ID NO:10:

CGGTCTCTCT CCTTC
15

(2) INFORMATION FOR SEQ ID NO:11:

        (i) SEQUENCE CHARACTERISTICS:
             (A) LENGTH: 16 base pairs
             (B) TYPE: nucleic acid
             (C) STRANDEDNESS: single
             (D) TOPOLOGY: linear

       (ii) MOLECULE TYPE: cDNA

      (iii) HYPOTHETICAL: NO

       (iv) ANTI-SENSE: YES

       (xi) SEQUENCE DESCRIPTION: SEQ ID NO:11:

CCGGTCTCTC TCCTTC
16

(2) INFORMATION FOR SEQ ID NO:12:

        (i) SEQUENCE CHARACTERISTICS:
             (A) LENGTH: 17 base pairs
             (B) TYPE: nucleic acid
             (C) STRANDEDNESS: single
             (D) TOPOLOGY: linear

       (ii) MOLECULE TYPE: cDNA

      (iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: YES

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:12:

GCCGGTCTCT CTCCTTC
17

    (2) INFORMATION FOR SEQ ID NO:13:

        (i) SEQUENCE CHARACTERISTICS:
            (A) LENGTH: 19 base pairs
            (B) TYPE: nucleic acid
            (C) STRANDEDNESS: single
            (D) TOPOLOGY: linear

        (ii) MOLECULE TYPE: cDNA

        (iii) HYPOTHETICAL: NO

        (iv) ANTI-SENSE: YES

        (xi) SEQUENCE DESCRIPTION: SEQ ID NO:13:

GCGCCGGTCT CTCTCCTTC
19

    (2) INFORMATION FOR SEQ ID NO:14:

        (i) SEQUENCE CHARACTERISTICS:
            (A) LENGTH: 12 base pairs
            (B) TYPE: nucleic acid
            (C) STRANDEDNESS: single
            (D) TOPOLOGY: linear

        (ii) MOLECULE TYPE: cDNA

        (iii) HYPOTHETICAL: NO

        (iv) ANTI-SENSE: YES

        (xi) SEQUENCE DESCRIPTION: SEQ ID NO:14:

CTCGCACCCC CG
12

    (2) INFORMATION FOR SEQ ID NO:15:

        (i) SEQUENCE CHARACTERISTICS:
            (A) LENGTH: 13 base pairs
            (B) TYPE: nucleic acid
            (C) STRANDEDNESS: single

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                    (D)  TOPOLOGY:  linear

           (ii)  MOLECULE TYPE:  cDNA

  5        (iii)  HYPOTHETICAL:  NO
           (iv)  ANTI-SENSE:  YES

           (xi)  SEQUENCE DESCRIPTION:  SEQ ID NO:15:

 10   CTCGCACCCC CGG
      13

      (2)  INFORMATION FOR SEQ ID NO:16:

 15        (i)  SEQUENCE CHARACTERISTICS:
                    (A)  LENGTH:  14 base pairs
                    (B)  TYPE:  nucleic acid
                    (C)  STRANDEDNESS:  single
                    (D)  TOPOLOGY:  linear
 20
           (ii)  MOLECULE TYPE:  cDNA

           (iii)  HYPOTHETICAL:  NO

 25        (iv)  ANTI-SENSE:  YES

           (xi)  SEQUENCE DESCRIPTION:  SEQ ID NO:16:

      CTCGCACCCC CGGC
 30   14

      (2)  INFORMATION FOR SEQ ID NO:17:

           (i)  SEQUENCE CHARACTERISTICS:
                    (A)  LENGTH:  16 base pairs
 35                 (B)  TYPE:  nucleic acid
                    (C)  STRANDEDNESS:  single
                    (D)  TOPOLOGY:  linear

 40        (ii)  MOLECULE TYPE:  cDNA

           (iii)  HYPOTHETICAL:  NO

           (iv)  ANTI-SENSE:  YES
 45
           (xi)  SEQUENCE DESCRIPTION:  SEQ ID NO:17:

      CTCGCACCCC CGGCGC
      16
 50
      (2)  INFORMATION FOR SEQ ID NO:18:

           (i)  SEQUENCE CHARACTERISTICS:
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                    (A) LENGTH: 9 base pairs
                    (B) TYPE: nucleic acid
                    (C) STRANDEDNESS: single
                    (D) TOPOLOGY: linear

 5
             (ii) MOLECULE TYPE: cDNA
            (iii) HYPOTHETICAL: NO

             (iv) ANTI-SENSE: YES
10
             (xi) SEQUENCE DESCRIPTION: SEQ ID NO:18:

     CTCTCACCC
     9
15
     (2)  INFORMATION FOR SEQ ID NO:19:

              (i) SEQUENCE CHARACTERISTICS:
                    (A) LENGTH: 9 base pairs
                    (B) TYPE: nucleic acid
20                  (C) STRANDEDNESS: single
                    (D) TOPOLOGY: linear

             (ii) MOLECULE TYPE: cDNA
25
            (iii) HYPOTHETICAL: NO

             (iv) ANTI-SENSE: YES
30
             (xi) SEQUENCE DESCRIPTION: SEQ ID NO:19:

     CTCTCAACC
     9
35   (2)  INFORMATION FOR SEQ ID NO:20:

              (i) SEQUENCE CHARACTERISTICS:
                    (A) LENGTH: 25 base pairs
                    (B) TYPE: nucleic acid
40                  (C) STRANDEDNESS: single
                    (D) TOPOLOGY: linear

             (ii) MOLECULE TYPE: cDNA
45          (iii) HYPOTHETICAL: NO

             (iv) ANTI-SENSE: YES

             (xi) SEQUENCE DESCRIPTION: SEQ ID NO:20:
50
     CTCTCGCACC CATCTCTCTC CTTCT
     25
```

(2) INFORMATION FOR SEQ ID NO:21:

        (i) SEQUENCE CHARACTERISTICS:
             (A) LENGTH: 27 base pairs
             (B) TYPE: nucleic acid
             (C) STRANDEDNESS: single
             (D) TOPOLOGY: linear
        (ii) MOLECULE TYPE: DNA (genomic)

     (iii) HYPOTHETICAL: NO

     (iv) ANTI-SENSE: NO

     (xi) SEQUENCE DESCRIPTION: SEQ ID NO:21:

CTAGAAGGAG AGAGATGGGT GCGAGAG
27

(2) INFORMATION FOR SEQ ID NO:22:

        (i) SEQUENCE CHARACTERISTICS:
             (A) LENGTH: 39 base pairs
             (B) TYPE: nucleic acid
             (C) STRANDEDNESS: single
             (D) TOPOLOGY: linear

     (ii) MOLECULE TYPE: RNA (genomic)

     (iii) HYPOTHETICAL: NO

     (iv) ANTI-SENSE: NO

     (xi) SEQUENCE DESCRIPTION: SEQ ID NO:22:

AGAAGGAGAG AGAUGGGUGC GAGAGCGUCA GUAUUAAGC
39

(2) INFORMATION FOR SEQ ID NO:23:

        (i) SEQUENCE CHARACTERISTICS:
             (A) LENGTH: 21 base pairs
             (B) TYPE: nucleic acid
             (C) STRANDEDNESS: single
             (D) TOPOLOGY: linear

     (ii) MOLECULE TYPE: cDNA

     (iii) HYPOTHETICAL: NO

     (iv) ANTI-SENSE: YES

     (xi) SEQUENCE DESCRIPTION: SEQ ID NO:23:

CTCTCACCCA TCTCTCTCCT T
21

(2) INFORMATION FOR SEQ ID NO:24:

      (i) SEQUENCE CHARACTERISTICS:
          (A) LENGTH: 21 base pairs
          (B) TYPE: nucleic acid
          (C) STRANDEDNESS: single
          (D) TOPOLOGY: linear

     (ii) MOLECULE TYPE: cDNA

    (iii) HYPOTHETICAL: YES

     (iv) ANTI-SENSE: YES

     (xi) SEQUENCE DESCRIPTION: SEQ ID NO:24:

CTCTCAACCA TCTCTCTCCT T
21

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